# This Page Is Inserted by IFW Operations and is not a part of the Official Record

# **BEST AVAILABLE IMAGES**

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

# IMAGES ARE BEST AVAILABLE COPY.

As rescanning documents will not correct images, please do not report the images to the Image Problems Mailbox.

Europäisches Patentamt

**European Patent Office** 

Office européen des brevets



(11) EP 0 832 032 B1

(12)

#### **EUROPEAN PATENT SPECIFICATION**

(45) Date of publication and mention of the grant of the patent: 14.04.1999 Bulletin 1999/15

(21) Application number: 96922990.5

(22) Date of filing: 08.07.1996

(51) Int. Cl.<sup>6</sup>: **B63B 35/28** 

(86) International application number: PCT/GB96/01634

(87) International publication number: WO 97/02980 (30.01.1997 Gazette 1997/06)

(54) FLEXIBLE VESSELS FOR TRANSPORTING FLUENT CARGOES

DEHNBARE BEHÄLTER ZUM TRANSPORT VON FLÜSSIGEN LADUNGEN CONTENEURS SOUPLES SERVANT A TRANSPORTER DES CHARGEMENTS DE MATIERES COULANTES

(84) Designated Contracting States:

AT BE CH DE DK ES FI FR GB GR IE IT LI LU MC

NL PT SE

(30) Priority: 07.07.1995 GB 9513911

(43) Date of publication of application: 01.04.1998 Bulletin 1998/14

(73) Proprietor:
Aquarlus Holdings Limited
St. Peters Port, Guernsey (GB)

(72) Inventors:

 SAVAGE, Nicholas, Macewan Stanner's Hill Farm Chobham GU24 8HN (GB)  SAVAGE, Christopher, David, Wyndham Mile Path Woking Surrey GU22 0JL (GB)

(74) Representative:

Ablett, Graham Keith et al Ablett & Stebbing, Caparo House, 101-103 Baker Street London W1M 1FD (GB)

(56) References cited:

FR-A- 2 210 180 FR-A- 2 377 931 GB-A- 2 181 996 US-A- 2 682 751 US-A- 3 289 721 US-A- 3 983 830

-

0 832 032

WO 97/02980 PCT/GB96/01634

#### CLAIMS:

20

 Apparatus for transporting fluent cargo through
 liquid comprising one or more units arranged substantially in linear alignment, wherein at least one said unit comprises two or more flexible containers close coupled side by side.

- Apparatus according to claim 1, wherein in use,
   adjacent facing sides of respective containers of said at least one unit are substantially parallel along at least part of their length.
- 3. Apparatus according to claim 1 or 2, wherein no two consecutive linearly aligned units comprise a single flexible container.
  - 4. Apparatus according to any preceding claim, wherein each container has angled, front and rear end sections.
  - 5. Apparatus according to any preceding claim, wherein each container is parallel sided.
- 6. Apparatus according to any preceding claim, wherein the container is diamond-shaped or hexagonal.
  - 7. Apparatus according to any preceding claim, wherein the containers are connected at their broadest extent.
- 30 8. Apparatus according to any preceding claim, wherein the apparatus comprises alternating sequential units of one and two containers.
- 9. Apparatus according to any preceding claim, wherein 35 the apparatus comprises three units of one container and two units of two containers.

10. Apparatus substantially as hereinbefore described with reference to the accompanying drawings.

WO 97/02980

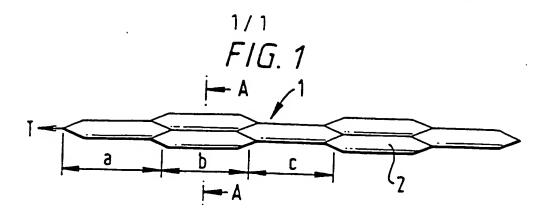
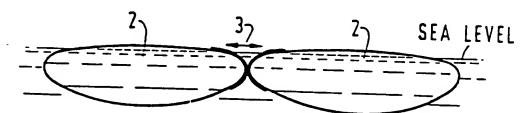
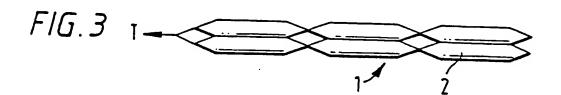
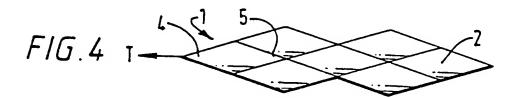
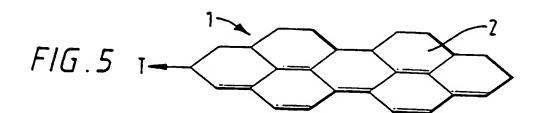


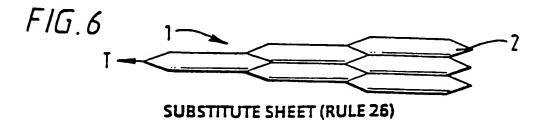
FIG.2











#### INTERNATIONAL SEARCH REPORT

tronal Application No

PCT/GB 96/01634 A. CLASSIFICATION OF SUBJECT MATTER IPC 6 B63B35/28 According to International Patent Classification (IPC) or to both national classification and IPC B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) IPC 6 B63B B65D Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Electronic data base consulted during the international search (name of data base and, where practical, search terms used) C. DOCUMENTS CONSIDERED TO BE RELEVANT Category ' Citation of document, with indication, where appropriate, of the relevant passages Relevant to claim No. FR.A.2 210 180 (GRIHANGNE) 5 July 1974 X 1,2,10 Y see page 3, line 24 - page 4, line 2; 3-7 figures 1,2 X FR,A,2 377 931 (LEDUN) 18 August 1978 1,2 see the whole document Y US,A,3 983 830 (MORGAN) 5 October 1976 3.7 see figures 1-6 US.A.3 289 721 (BENSON) 6 December 1966 4,5 see figures 1,2 GB,A,2 181 996 (YANG) 7 May 1987 see figures 1-2,1-3 -/--. Further documents are listed in the continuation of box C. Patent family members are listed in annex. X I Special categories of cated documents: T later document published after the international filing date or priority date and not in conflict with the application but died to understand the principle or theory underlying the "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier document but published on or after the international "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone fuing date 'L' document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such document, such combination being obvious to a person skilled in the art. "O" document referring to an oral disclosure, use, exhibition or other means \*P\* document published prior to the international filing date but later than the priority date claimed "A" document member of the same patent family Date of the actual completion of the international search Date of mailing of the international search report 29.10.96 24 October 1996 Name and mailing address of the ISA Authorized officer European Patent Office, P.B. 5818 Patentiaan 2 NL - 2280 HV Ripsent Td. (+ 31-70) 340-2040, Ta. 31 651 epo nl.

1

Fax (+31-70) 340-3016

DE SENA. A

## INTERNATIONAL SEARCH REPORT

Er signal Application No PCT/GB 96/01634

		PCT/GB 96/01634					
C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT  Category Citation of document, with indication, where appropriate, of the relevant passages Relevant to claim No.							
	parage	RESTAN IO CIAM NO.					
A	US,A,2 682 751 (BOCK) 6 July 1954 see figures 11,12	1-3,5, 7-9					
		•					
	•						
	·						
ĺ							
-	. <del>-</del>						
	-						
Ì							
1							
	·						

1

### INTERNATIONAL SEARCH REPORT

information on patent family members

PCT/GB 96/01634

Patent document cited in search report	Publication date	Patent family member(s)		Publication date
FR-A-2210180	05-07-74	AU-A- CA-A- DE-A- GB-A- NL-A- US-A-	6319873 1002392 2361597 1440800 7317020 3952679	05-06-75 28-12-76 20-06-74 23-06-76 14-06-74 27-04-76
FR-A-2377931	18-08-78	NONE		
US-A-3983830	05-10-76	NONE		
US-A-3289721	06-12-66	NONE		•••••••
GB-A-2181996	07-05-87	US-A-	4688505	25-08-87
US-A-2682751	06-07-54	NONE		